Biocomplexity of Introduced Avian Disease in Hawaii: Host Demography Subproject

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A Southern house mosquito (*Culex quinquefasciatus)* biting an Apapane (*Himatione sanguinea*). 65% of Apapane die after receiving a single infective mosquito bite.

Photo by Jack Jeffrey.

Objectives:

- ☆ Document effects of avian malaria and pox on native birds in the wild
- ☆ Determine factors that facilitate evolution of disease resistance and population persistence
- ☆ Examine effect of climate change on vector-borne diseases

Accomplishments:

- ☆ Mistnetted and sampled over 12,000 birds at 9 study sites along a 1800-m elevational gradient
- ☆ Documented the evolution of disease-resistant subpopulations of Hawaii amakihi (*Hemignathus virens*) in lowland southeast Hawaii

Significance:

- ☆ Whether differences across elevational gradient serve as model for effects of climate change on vector-borne diseases
- ☆ Combined with modeling, can determine weak links in disease transmission that may be targeted for management